CNS-6 Vascular anatomy of the CNS

OBJECTIVES OF THE CLASS:
THEORETICAL
1. to know main arteries of the CNS and their major branches; 2. to know the range of blood supply for particular arteries of the CNS; 3. to know the function of the cerebral arterial circle (the circle of Willis); 4. to know main veins of the CNS and their tributaries;
THEORETICAL and PRACTICAL
5. to be able to recognize and give names of the cerebral arteries and their major branches; 6. to be able to identify the components of the cerebral arterial circle (the circle of Willis); 7. to be able to recognize and give names of the main cerebral veins.

A student should be prepared theoretically for the lab class.
The information may be found in the chapter 17 (*Clinical neuroanatomy* by Snell).

DURING THE SEMINAR:
– main sources of blood supply to the CNS are described; – main arteries of the CNS and their major branches are identified and described; – the cerebral arterial circle (the circle of Willis) is presented; – main cerebral veins and their tributaries are identified and described.

DURING THE PRACTICAL CLASS A STUDENT SHOULD RECOGNIZE AND IDENTIFY:
– main arteries of the CNS and their major branches; – the cerebral arterial circle (the circle of Willis); – main cerebral veins and their tributaries. The student may use the list attached below as a reference of demanded structures.

AFTER THE CLASS A STUDENT:
– should know main arteries of the CNS and their major branches and be able to find them in the specimen; – should know the range of blood supply for particular arteries of the CNS and the blood supply for particular areas; – should know the structure and function of the cerebral arterial circle (the circle of Willis) and be able to recognize its components; – should know main cerebral veins and their tributaries and be able to recognize them in the specimen.

At the end of the class a student should participate in the credit consisting of 6 MCQ and 4 pins in order to confirm the presence at the class and collect the points if successful.

EXAMPLE QUESTIONS (choose <u>one</u> correct answer):	
Which of the following arteries <u>does not</u> belong to the circle of Willis: **A.** anterior cerebral artery **B.** anterior communicating artery **C.** anterior choroidal artery **D.** posterior cerebral artery **E.** posterior communicating artery	Great cerebral vein (vein of Galen) empties to: **A.** superior sagittal sinus **B.** transverse sinus **C.** superior petrosal sinus **D.** sigmoid sinus **E.** straight sinus

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List of the structures to be practically identified and recognized by the student:

ARTERIES

Internal carotid artery (ICA)
Ophtalmic artery (OA)
Anterior cerebral artery (ACA)
Pericallosal artery
Anterior communicating artery (ACoA)
Middle cerebral artery (MCA)
Anterior choroidal artery (AChoA)
Posterior communicating artery (PCoA)
Posterior cerebral artery (PCA)
Basilar artery (BA)
Superior cerebellar artery (SCA)
Pontine branches (rami) of BA
Anterior inferior cerebellar artery (AICA)
Posterior inferior cerebellar artery (PICA)
Vertebral artery (VA)
Anterior spinal artery (ASA)
Posterior spinal artery (PSA)

DURAL SINUSES

Superior sagittal sinus
Inferior sagittal sinus
Transverse sinus
Sigmoid sinus
Occipital sinus
Straight sinus
Superior petrosal sinus
Inferior petrosal sinus
Cavernous sinus
Intercavernous sinus

VEINS

Cerebral veins
- Deep cerebral veins
  - Vena thalamostriata sup.
  - Internal cerebral vein
  - Great cerebral vein (of Galen)
- Superficial cerebral veins
  - Superior cerebral veins
  - Bridging veins
  - Inferior cerebral veins
  - Superior anastomotic vein (Vein of Trolard)
  - Inferior anastomotic vein (Vein of Labbé)
- Basal vein (of Rosenthal)

Cerebellar veins
- Superior vermian vein
- Sup. veins of cerebellar hemisphere
- Inf. veins of cerebellar hemisphere

Internal vertebral venous plexus
External vertebral venous plexus
Basilar plexus